ENG

PROXIMITY ELECTRONICS

INSTALLATION INSTRUCTIONS & USER MANUAL

Rear parking sensor mod. **EPS-DUAL 2.0**
mod. **EPS-DUAL 2.0 with DISPLAY**

EPS-DUAL 2.0 can be installed only on rear bumper.

The sistem is strictly a driver assistance device and should not be relied upon as a security device or a substitute for safe driving practices.
Use common sense when reversing and always follow recommended safe driving guidelines.

1

a) The installation of the antenna sensor, constituted by an aluminium adhesive ribbon, must be applied to the inner surface of the bumper. It is **of some importance** that the zone of application corresponds to the **higher part** as regards the ground but also the **most distant** from the car body. It is not advisable to install the antenna sensor too low.

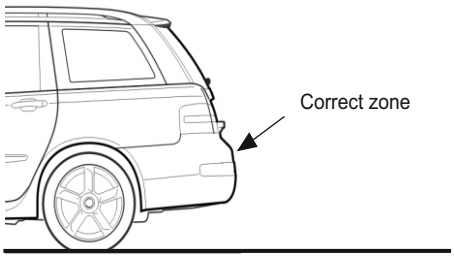

Fig. 1

b) Disassemble the bumper.

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STARTING PROCEDURE

a) Identify on the car body the zone close to the extremity of the bumper and, on the side where it is present the back-gear lamp, a possible hole of passage toward the intern of the trunk in order to carry on the *RF cable* from the antenna sensor.

b) Through the individuated passage route the *RF cable* inside the trunk leaving the fast-on terminal outside**.** (Fig. 2)

Fig. 2

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MOUNTING THE *ANTENNA SENSOR*

Thoroughly clean with alcohol or nitre solvent (be careful not to use anti-adhesive detergent) the inner surface of the bumper of the zone previously identified (see Fig.1) on which will be applied the antenna sensor.
Starting from the zone where there is the *RF cable* , start applying the adhesive aluminium tape (antenna sensor) practising a good pressure to make it well adhere to the inner surface of the bumper *.

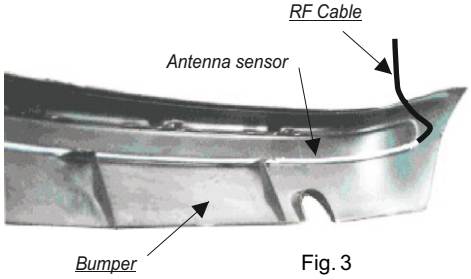

Fig. 3

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When the *antenna sensor* has been attached, covering the whole of the bumper from left to right, the excess length is cut off. Place a piece of the included *sticking material* at either ends of the *antenna sensor* to ensure a secure fixing onto the bumper surface.

It is recommended (but not essential) to cover the antenna with a black anti-rust protection paint of the same type that is applied to the underneath of a car chassis or similar to protect from the elements (do not use silicon paste).

***NOTE:**

1) It is important to start and finish the application of the tape to about 15 cm from both ends of the bumper

2) The antenna sensor can not be applied on metal bumpers.

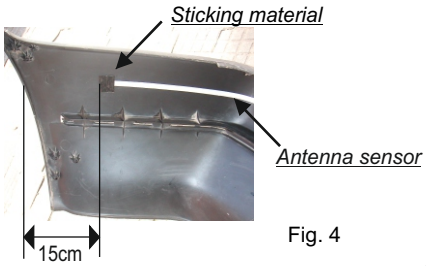

Fig. 4

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Connect the *RF Cable* coming from the ECU to the *antenna sensor*. Apply a piece of sticking material on the connection and fix it on the bumper by a strong pressure (If the ambient temperature is below 10 °C we recommend heating both the mastic and the sticking area on the bumper). It is necessary to use the same material to fix the opposite extremity of the antenna. (Fig. 5).

Replace the bumper and pull the *RF Cable* inside the luggage compartment in order not to leave excess cable outside.

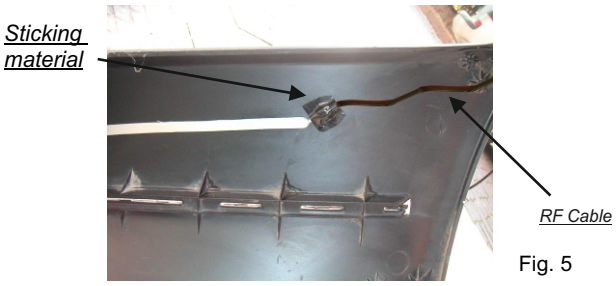

Fig. 5

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ELECTRICAL CONNECTIONS

a) Connect the red lead of the *power cable* to the positive cable that feeds the reversing lamp.

b) Connect the black lead of the power cable to the earth of the reversing lamp.
-- IT ADVISABLE NOT TO CONNECT TO ANY OTHER POINT OF EARTH ON THE CHASSIS OF THE CAR --

c) Insert all plug-in connectors into the proper position on the Central Unit (ECU) as in Fig. 6.

Some vehicles are equipped with a metal crash protection bar insert facing the inside surface of the bumper. When this metal surface is too close to the inner surface of the bumper where you have placed the *antenna sensor*, the distance signal can be reduced.
To adjust the signalling distance it is sufficient to change the dip-switch positions (see schematic). Take care that the sensitivity No 1 is the lowest and the number 4 is the largest.

The sensibility that we recommend for most cars is the No. 2.

We suggest to carry out tests to determine the detection range, pointing out that increasing the sensibility where it is not necessary, can cause more false alerts.

MOUNTING THE BUZZER (mod. EPS-DUAL 2.0)
a) Mount the EPS-DUAL 2.0 speaker using its adhesive in a proper place in order to ensure a good perception of sound by the driver.
b) Connect the *buzzer cable* to the *buzzer* through its plug-in connector.

MOUNTING OF DISPLAY (mod. EPS-DUAL 2.0 with DISPLAY)
a) Take the *display* cable from the back of the car to the front, using the appropriate steps as edges of plastic or rubber seals. Fix the *display* above the rearview mirror using the adhesive on the back of it.
b) Connect the *display* cable to the *central module* (instead of the buzzer cable) by the proper connector.

FINAL TESTING PROCEDURE
a) Turn on the key, insert the back gear. In a fraction of second the control unit performs a check of the functionality of the system and, if everything has been done correctly, the buzzer emits an acoustic sound of "OK" (two notes in rapid succession). Once you have this signal the system becomes operational.

Possible problems and their solutions
1. If the acoustic transducer does not emit any signal check all the connections.
2. If the transducer emits an audible warning signal consisting of 2 notes (one high and one low) repeated 3 times) check the connection of RF cable.

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b) Starting from about 1 meter away from the center of the bumper, slowly approach both hands to simulate a parking maneuver. At a distance of about 60/70 cm will be heard the first acoustic signals whose repetition rate will increase at the decreasing distance to become a fast intermittent sound and then a continuous higher frequency sound at about 10-15 cm from the bumper.

WARNING: For a correct simulation be careful to reset the system every time you approach.

c) If the system shows to work regularly it is possible to fix definitely the bumper.

Note: EPS-DUAL 2.0 *starts to give the signalling* ***only*** *when the vehicle is being approached to the obstacle; a fixed object in front of the bumper, for instance the hauls hook and a bull bar or the sides walls of a car box, is not signalled and it is not bothered the normal operation of the device.*

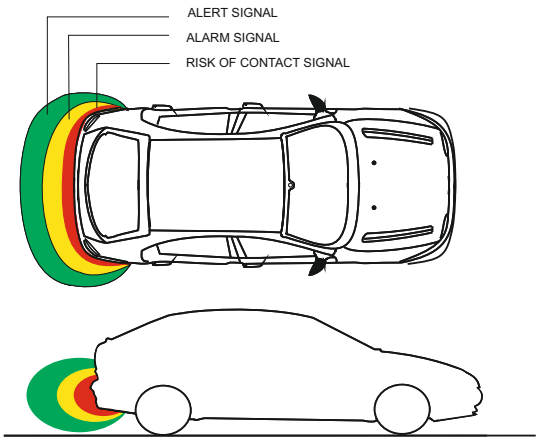

Fig. 6

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USER MANUAL

OPERATING PRINCIPLE

EPS-DUAL 2.0 is an innovative parking sensor that uses low energy electromagnetic waves and is able to detect the approach of any kind of obstacle.
The activation of the device is obtained by the insertion of the back gear and confirmed by a signal of "OK". Once activated, the EPS-DUAL 2.0 generates around the bumper, on which is installed, a protection zone (Fig. 6).
When any obstacle present in the protection zone tends to approach the bumper you will hear a series of beeps.

WORKING EXAMPLE

A) As soon as the EPS-DUAL 2.0 is activated the control functionality of the system is carried out in a fraction of second.
In case of anomalies the speaker emits an audible warning signal consisting of 2 notes (one high and one low) repeated 3 times. If this happens check the antenna connection to the ECU.
If the control is **OK** you hear a signal of two notes in rapid succession to confirm the proper functioning of the system.

B) When approaching an obstacle the system activates the acoustic signal at a distance between the bumper and obstacle (measured in the central area of the bumper) of about 60 / 70 cm with 3 types of sounds:

1) **an increase in sequence of "BIP" (alert)** informs the driver that an obstacle is approaching.

2) **intermittent sounds of fast repetition rate** when the obstacle comes close to the bumper at a distance between 15 and 30 cm measured on the middle of bumper **(alarm).**

3) **continuous sound at a more acute frequency (risk of contact)** when an obstacle is very close to the bumper (10-15 cm).

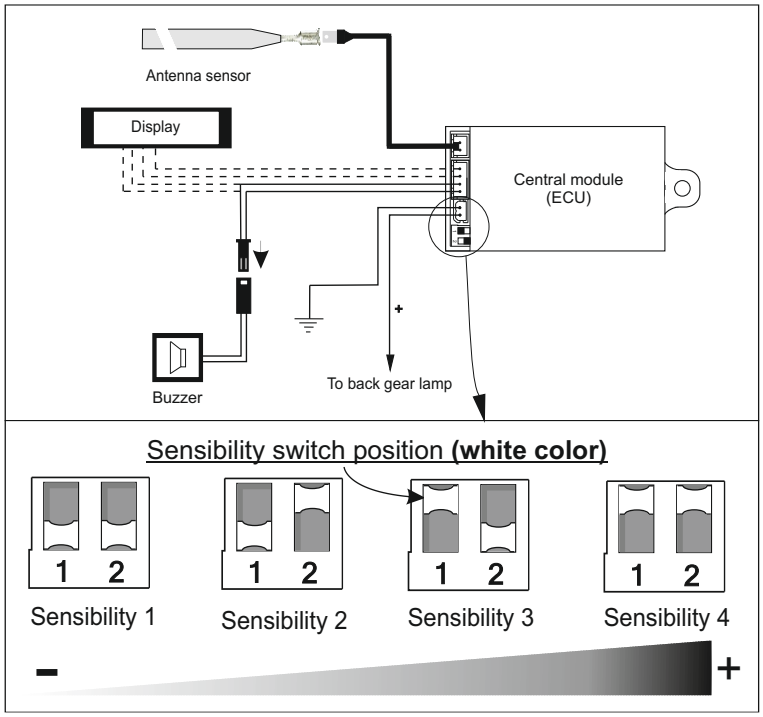
Note:
- The distances will vary depending on the size of the obstacle and correspond to the central zone of the bumper; on the lateral edges the distances is less (see Figure 6)

- The alert occurs only when the vehicle is approaching an obstacle, a fixed object in front of the bumper is only detected after the first movement of approach.

WARNING
1. In presence of rain or high moisture weather, the system reduces his sensibility automatically in order to eliminate a part of false alarms that could be given by movement of water on the bumper.

2. As soon as the system is activated an acknowledgement of the surrounding of the bumper is made.
Consequently **it is very important**, during testing operation, not to switch on the system while you are very close to the central unit and antenna sensor in order not to have false information on the working capability of the system.

During the test you must also take into consideration the fact that, after the first approach to the bumper, any subsequent APPROACH without first reset the system, can give false interpretations of the functionality of the sensor due to special characteristics of the EPS-DUAL 2.0 software specifically created to reduce false signalling in the rainy conditions.



TECHNICAL CHARACTERISTICS

- Operating range from 9,5 to 18V
- Max current absorption 70 mA
- Operating temperature from -20 to +90 °C
- Max. Distance to begin detection 70-80 cm

Central module (ECU)

Display

RF Cable

Buzzer

Buzzer cable

Power cable

Antenna sensor

Sticking material

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